Abstract

The present invention provides a thermoelectric element in which a thin film of p-type thermoelectric material and a thin film of n-type thermoelectric material, which are formed on an electrically insulating substrate, are electrically connected, in which the p-type thermoelectric material and the n-type thermoelectric material are selected from specific complex oxides with a positive Seebeck coefficient and specific complex oxides with a negative Seebeck coefficient, respectively. The present invention also provides a thermoelectric module using the thermoelectric element(s) and a thermoelectric conversion method. In the thermoelectric element of the present invention, since a p-type thermoelectric material and an n-type thermoelectric material are formed into a thin film on an electrically insulating substrate, the thermoelectric element of the invention can be formed on substrates having various shapes, thereby providing thermoelectric elements having various shapes.